

# Remote Assessment: How Online Survey and Proctored Exams are Used in a Web-Based System

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## ABSTRACT

Faced with the rising need for distance learning and digital data collection, institutes need a centralized infrastructure that encompasses online surveys and proctored exams. This paper presents the design and implementation of a combined web-based portal that can support both online questionnaires and a proctored test. It also seeks to improve security, scalability and user experience. In addition to providing secure authentication and real-time monitoring to ensure the integrity of online tests, the proposed solution also includes comprehensive survey administration features for data collection and analysis. The technology prevents evaluation malpractice through automated fraud detection, facial recognition, and other features. It also facilitates academic and organizational research with the combination of real-time analytics and configurable survey tools. In addition, demo tests are also provided in the portal. If those who had not signed up, the paper also claims that their new approach to remote assessments and surveys can make both of them much faster and easier to learn, along with making them effective for research, corporate training and educational field using usability testing, performance analyzing and user feedback techniques to study the efficiency of the portal. Findings show that the mixed approach provides an uninterrupted user experience, improves survey effectiveness, and increases faculty confidence in assessment reliability.

**KEYWORDS:** Core ASP.NET, Web API, SQL Server, HTML/CSS, JavaScript, React.js.

## I. INTRODUCTION

The rapid advancement of digital technology has transformed the way surveys and evaluations are detected across various fields, including research, business training, and education. Survey data indicates nine of ten organizations use Web processes for jobs postings, eight of ten for Web benefits information dissemination, and approximately six of ten for Web benefits self-service and Web employee training. [1] These web-based solutions offer flexibility, scalability, and efficiency, and are slowly replacing traditional paper-based assessments and in-person surveys. Colleges began taking classes and tests online, for courses in every field. A written test that filters students for the hiring process were also impacted by the COVID-19 Pandemic. [2]

Online Proctoring is not a new field of study in education. Before Pandemic also, most of the universities/institutes were employing proctored systems for online courses. Most of the competitive and adaptive exams like GRE, GMAT, CAT are only proctor-based exams. [2] As such, this research is relevant in exploring the extent to which Webcam-based surveillance deters misconduct in online examinations.

There have been many suggested technologies on countering the problem, but we believe that our study uniqueness. [3] Remote Proctored Theory & Objective Online Examination: Generic concept and suggests the system builds a network to give a service to the examinees and professors. The motive of Remote Proctored Theory and Objective Online Examination is to meet the demand of the institute conducting exam online. [4]

Remote learning has established shared practice and recently extended utilization in educational institutes and has supplanted a high percentage of normal classrooms [5] Online examinations are a means of assessing the knowledge of students who are remote and thus require little to no physical presence of proctors, a necessity that inevitably leads to the reliance on the use of online proctoring systems to carry out these examinations [6]. There is a growing trend towards using the electronic exams system as opposed to the traditional exams system for multiple reasons [7], most importantly being the urgent need to transition to this exam type due to some state emergency circumstances that prevent the adoption of the traditional exam system, in addition to the advantages that the electronic exam system provides that will facilitate the examinee to pass the exams easily and smoothly [8].

## Abbreviations and Acronyms

- **QoL:** Quality of Life
- **KPI:** Key Performance Indicator
- **NPS:** Net Promoter Score
- **CSAT:** Customer Satisfaction
- **CRM:** Customer Relationship Management
- **2FA:** Two-Factor Authentication
- **VPN:** Virtual Private Network
- **SSL:** Secure Sockets Layer

## Units

- **Number of Users:** Quantify the total users interacting with the portal.
- **Session Duration:** Measure the average time (in minutes or seconds) users spend per session.
- **Page Views:** Count the average number of pages viewed per session.
- **Bounce Rate:** Expressed as a percentage, this indicates the proportion of users who leave the portal after viewing only one page.
- **Response Time:** Average time (in milliseconds or seconds) the system takes to respond to user actions.
- **Response Rate:** Percentage of participants who complete the survey out of those invited.

- **Drop-off Rate:** Percentage of participants who start but do not complete the survey.
- **Average Response Time:** Mean time (in minutes or seconds) taken by participants to complete the survey.

## II. RELATED WORK

In order to preserve academic integrity and guarantee fair assessments, the creation of safe online testing platforms has become more and more important. Artificial intelligence (AI) has recently been included into automated proctoring systems, which track and assess test-takers' behavior without the use of human invigilators. provides an AI-powered proctoring system, for example, that captures and examines students' screens, webcams, and microphones, identifying and reporting any anomalies to produce credibility reports after the test.

In a similar vein, Nanyang Technological University research emphasizes the creation of a safe online testing platform intended to reduce academic fraud. This solution solves issues like identity authentication and test environment monitoring while enabling remote exams. These developments highlight how crucial it is to use technology to build reliable and secure online testing environments that adhere to the requirements of academic evaluations.

## III. DATA AND SOURCES OF DATA

Integrating online surveys and proctored assessment portals requires a thorough grasp of various data sources and

collection techniques. Automated systems that record exam sessions for later review are one of the proctoring techniques used by proctored assessment platforms, like Question-mark, to ensure the integrity of the assessments.

The vast amounts of data produced by these platforms—such as system logs, video recordings, and user interaction metrics—are crucial for monitoring participant activity and guaranteeing compliance.

## IV. RESEARCH METHODOLOGY

**Systematic Literature Review:** To discover best practices and potential issues, start by reviewing previous research on digital survey platforms and online proctoring systems.

**Design and Development:** To produce an intuitive web gateway, apply user-centered design concepts. During proctored tests, utilize secure authentication techniques, including multi-factor authentication, to confirm user identities.

**Pilot Testing:** To assess system functionality, user experience, and the efficacy of proctoring procedures, conduct preliminary testing with a limited user group. To improve the platform and to get user input.

**Data collection:** Make sure that surveys and assessments are conducted consistently by implementing the portal for wider use. To reduce the biases associated with self-selection, use the multiple site entry strategy to acquire diverse participant samples.

## Figures and Tables

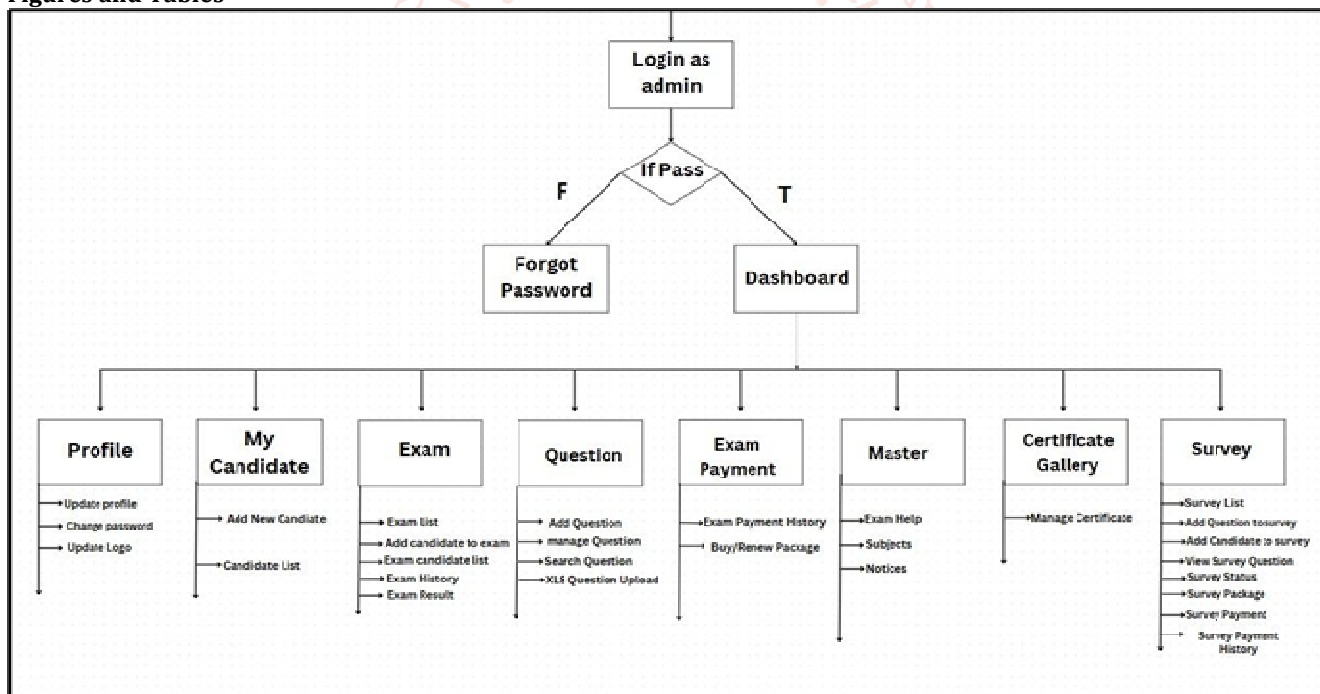


**Fig.1 Flowchart on Admin Login**

Figure 1: The admin logs in, and the process begins. They are redirected to dashboard (if authenticated) or to Forgot Password (if authentication fails). The user interface (dashboard) is filled with a lot of management activities which includes profile (updating profile, changing passwords, and updating logo), managing candidates (adding new candidates and seeing candidates list) and managing exams (exam lists, assigning candidates, exam history and results). Other support tasks include question management (add, search and upload via XLS), exam payment management (payment history and package renewal), and master data access (exam help, subjects and notices) Certificate management and survey handling (adding questions, assigning candidates for the chosen survey, viewing responses, managing payments, and tracking survey history) are other functionalities. This flowchart gives you a structured overview of the extensive role of the admin in effective management of examinations and candidates.

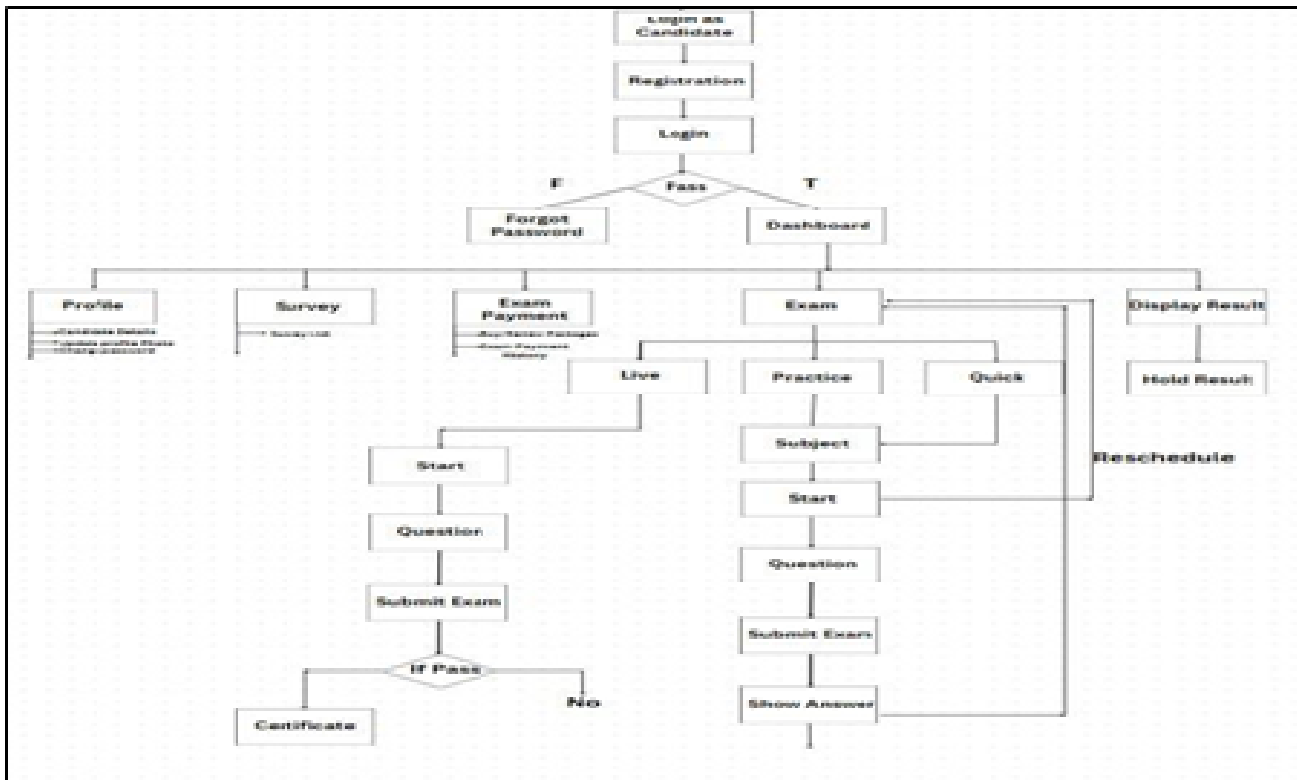


**Fig.2 Flowchart on Candidate Login**

Figure 2: One of the candidates begins by signing up and logging in. They can reset their password or log into the dashboard depending on authentication success. Candidates can then navigate through their dashboard, profile (where they can modify details), surveys or questioners, and pay for their tests. The study process consists of live, practice, and quick exams, and each of them consists of subject selection, answer input, and exam submission. If the candidate passes, they are awarded a certificate; if they fail — they are not. Exam results may be exhibited, maintained or postponed. This flowchart describes the systematic procedure of online assessment for students.

## V. RESULTS AND DISCUSSION

### Results of Descriptive Statics of Study Variables

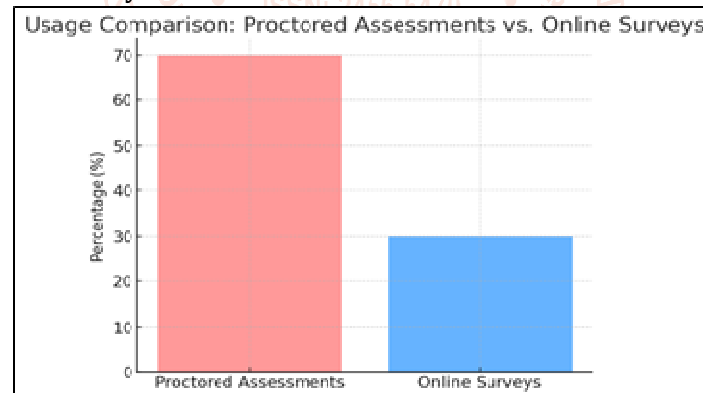


**Fig 4: Compares the usage of Proctored Assessments (70%) vs. Online Surveys (30%).**

Bar Graph as Fig 4 is Comparing Proctored Assessments and Online Surveys Astonishingly, in fact, 70% on the data are proctored Assessments leading to show the importance of monitored exams, as it will not only increase the integrity but also avoid the act of academic misconduct. In addition, 30% of Online Surveys indicate that they are used for feedback collection, self-assessment or non-proctored evaluations (not that to assume this reminds 30%). The wide margin indicates that institutions find security and credibility in online assessments important and favor exams over surveys for high-stakes evaluations — knowing that proctored exams are much more secure and credible than surveys. That being said, surveys are still a great way to get insights and do informal assessments.

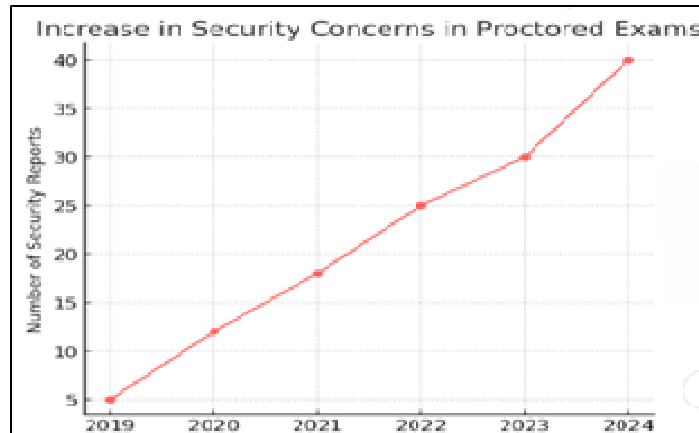


**Fig 5: Shows the increasing trend of security concerns in proctored exams from 2019 to 2025**

Fig 5, is the line plot which shows the Increasing trend of Security concern in proctored examinations for web-based systems from 2019 till 2024. In short, the persistency of reported security incident is increased from 5 in 2019 to 40 in 2024, indicating the examination is harder to be integrity. This increasing trend of online test retention indicates with the global acceptance of online proctored exams so have the incidents of cheating, privacy concerns and system vulnerabilities. This shows how AI-powered proctoring solutions, multi-factor authentication measures, tracking and monitoring tools provide an answer to these dilemmas and can strengthen security-cracking web assessments, prevent dirty moves of any kind and lift all up in the academic community.

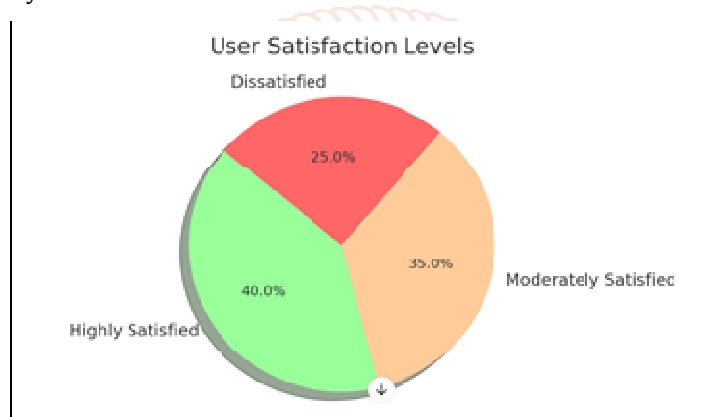


**Fig 6: Displays user satisfaction levels, with 40% highly satisfied, 35% moderately satisfied, and 25% dissatisfied.**

In Fig 6 The degree of user satisfaction in web-based system for proctored assessments and online surveys. 40% of users are very satisfied and that indicates the system satisfies the target audience in terms of accessibility, security and functionality. 35% of users are moderately satisfied, indicating that the platform is, overall, useful/working, but could likely use minor tweaks (UX, tech support, etc.). But 25% of the users are not satisfied, pointing to issues with things like proctored exams (which may put users' privacy in jeopardy), technical problems when taking an online exam or usability of online surveys. These data indicates that the system overall performs well yet requires improvements to impact the experience of users even more positively.

**Fig 7. 1 Experimental result**

Overall, the candidate dashboard is a critical component in a web-based assessment system that enhances the efficiency and effectiveness of the examination process for users. It includes key metrics such as the number of live / practice / quick exams and the total subjects / questions and notices available to the candidate. It is also tracking survey participation, which in the screenshot above, is currently at zero. Such a structure improves the user journey, accessibility, and performance tracking for the users → candidates can easily see their progress so far and any upcoming assessments structured properly.

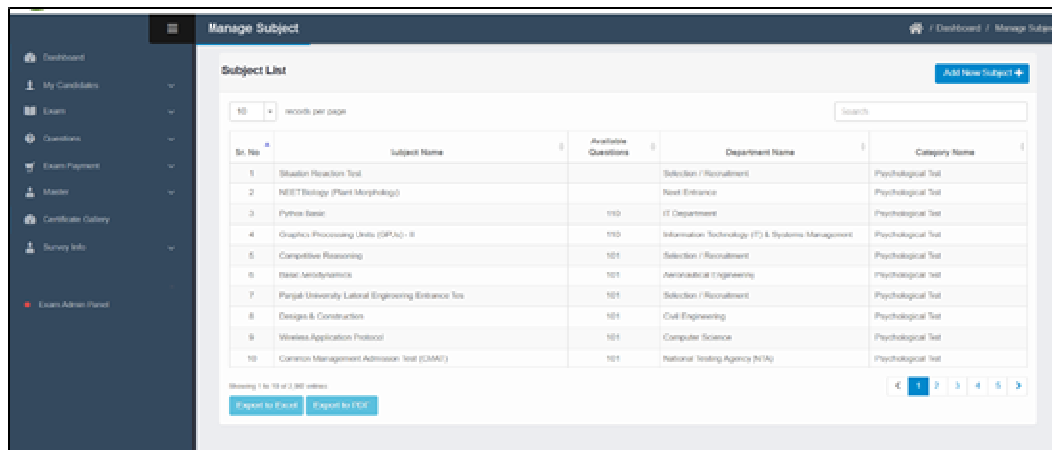


**Fig 7. 2 Experimental results**

What is Admin Dashboard in Web Based Assessment System? The interface consists of important statistics such as total live exams, total registered candidates, total subjects, and uploaded questions which would help admins to monitor the entire examination process. On top of that, it also keeps track of notices issued by admins as well as super-admins, and surveys conducted, currently at zero. As a result, this proper design helps the administrators has an easy way to control the scheduling of examination, the registration of candidates, uploading of questions, and conducting surveys, thus ensuring smooth execution of proctored examinations and surveys in the system.

**Table 1: Comparison of Online Surveys and Proctored Exams in a Web-Based System**

| Parameter                      | Online Surveys                          | Proctored Exams                        |
|--------------------------------|-----------------------------------------|----------------------------------------|
| <b>Purpose</b>                 | Collecting feedback, opinions, and data | Evaluating knowledge and skills        |
| <b>Security Level</b>          | Low – No real-time monitoring           | High – AI or human proctoring involved |
| <b>Authentication Required</b> | Basic login or anonymous participation  | Strict identity verification required  |
| <b>Cheating Prevention</b>     | Minimal – No strict monitoring          | Strong – Anti-cheating measures used   |
| <b>User Experience</b>         | Easy and user-friendly                  | Can be stressful due to surveillance   |

Web-based system for proctored assessments and online surveys Pie chart: Satisfaction levels 40% of users are highly satisfied, which means the system has met expectations in terms of being accessible, secure, and up-to-date. On the positive side, only 5% of users are quitting on the platform completely. However, 25% of users are dissatisfied which can lead to problems like privacy issues in proctored exams, technical issues or usability issues in free text surveys. This data shows that overall, the system is liked, but as almost always there is work to be done to improve the experience for everyone.

## VI. CONCLUSION

Online survey facilities allow educational institutions and organizations to administer proctored tests and gathering data in more an integrated and streamlined way. This solution improves robustness and scalability for both proctored exams and questionnaires whilst maintaining an easy user experience for all stakeholders (students, researchers, administrators). Real-time monitoring and analytics functionalities provide the much-needed assurance of academic integrity, giving timely insight into assessment performance and survey responses; Moreover, this framework is scalable and versatile to be applied in several areas, such as education, corporate training, and research. Given the shift towards digital solutions, such a platform does not only meet the open demand of secure and reliable testing but also lays the foundation for future innovations in the industries of online education and data collection. The SEB browser is compatible only with the Moodle environment that it need to be run in a secured examine environment, while SEB and Google Meets are also compatible which needs to be used during the examination session for communication with the examinees. SEB Browser supports multiple operating systems, including Windows,

macOS, and Linux. S, and iOS, and the features in these systems can be used to provide a more suitable exam environment for examinees. Future research is the detection of cheating on an online examination using AI technologies with the wearable IoT device.

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